66th Annual Convention of OTAI

November 18-19, 2011

Siyambola T.O

IOFATS - 2011

In Pursuit of Excellence

IOFATS-2011

Organised by

Oil Technologists' Association of India
(Southern Zone)

at

CSIR-Indian Institute of Chemical Technology
HYDERABAD, INDIA

SPONSORED BY

Vanaspati Industry (Gold) ivpa

Godrej Industries Ltd., Mumbai (Silver)

Marico Industries Ltd., Mumbai (Silver)

SUPPORTING ORGANISATIONS

AOCS American Oil Chemists' Society

iict Indian Institute of Chemical Technology

JOCS Japan Oil Chemists' Society

The Solvent Extractors' Association of India

Euro Fed Lipid European Federation for the Science and Technology of Lipids

66th Annual Convention of OTAI
November 18-19, 2011

Siyanbola Tolutope O.
Chemistry Dept.
Covenant University, Ota
Ogun State, Nigeria.

IOFATS - 2011
OTA
1945 2011
In Pursuit of Excellence

INTERNATIONAL SEMINAR
on
"Innovations in Oils, Fats & Allied Products towards Sustainability"
&
"Lipids Expo 2011"

NOVEMBER 18 - 19, 2011

at

CSIR- Indian Institute of Chemical Technology
Hyderabad - 500 007, India

SUPPORTING ORGANISATIONS

- AOCS — American Oil Chemists' Society
- CSIR - Indian Institute of Chemical Technology
- JOCS — Japan Oil Chemists' Society
- The Solvent Extractors' Association of India
- Euro Fed Lipid — European Federation for the Science and Technology of Lipids

Organised by

Oil Technologists' Association of India
(Southern Zone)

Souvenir Sponsored by: **FARE Labs Pvt. Ltd., Gurgaon**

PP-67

Synthesis and Characterization of Polyamide-Urethane/Clay Nanocomposites from Yellow Oleanda (*Thevetia Peruviana*) Seed Oil

T. O. Siyanbola[1,3], B. Anjaneyulu[2], Ramanuj Narayan[1], O. Olaofe[4], E. T. Akintayo[4], B.V.S.K. Rao[2], R. B. N Prasad[2] and K. V. S. N. Raju[1,*]

[1]Polymers & Functional Materials (Formerly OCP) Division
[2]Centre for Lipid Research, India Institute of Chemical Technology, Hyderabad-500007
[3]Chemistry Department, College of Science and Technology, Covenant University, P. M. B. 1023, Ota, Ogun State, Nigeria
[4]Chemistry Department, University of Ado-Ekiti, P. M. B. 5363, Ado-Ekiti, Nigeria
E-mail: kvsnraju@iict.res.in

Thevetia peruviana commonly known as yellow oleanda or lucky nut seed oil was harvested in Emure-Ekiti, southwestern Nigeria. The extraction of the seed oil was carried out using n-hexane in a soxhlet extractor. The seed oil with high contents of 18:1 (48.24%), 16:0 (22.25%), 18:2 (19.76%) fatty acids and having the following physico-chemical parameters (I.V, 75.4; S.V, 192.5; P. V, 1.9; A.V, 2.0; specific gravity, 0.91175; density, 0.90905. The seed oil was used in the preparation of diethanolamide. The diethanolamide was subsequently used in the preparation of polyurethane/clay nanocomposite. The formation of the hybrid polymeric coating was monitored and confirmed using Fourier Transform Infrared Spectroscopy (FT-IR), Nuclear Magnetic Resonance (^{1}H-NMR and ^{13}C-NMR), Electronspin ionization-mass spectroscopy (ESI-MS), X-ray diffraction spectroscopy (XRD). The thermal stability of the product was studied by Thermal gravimetic analyser (TGA), Dynamic and mechanical thermal analyser (DMTA), Differential scanning calorimetry (DSC).

***

PP-68

Synthesis, Characterization and Evaluation of Epoxy Jatropha Oil as a Plasticizing Agent for Epoxy Resins

A. Sammaiah[1], K. I. Suresh[2], K. V. Padmaja[1] and R. B. N. Prasad[1,*]

[1]Centre for Lipid Research, [2]Polymers and Functional Materials Division
Indian Institute of Chemical Technology, Hyderabad-500007
Email: rbnprasad@iict.res.in

Resins like epoxy and polyvinyl chloride etc., require modifications to improve ductility and impact resistance. Epoxidised vegetable oils (EVO) like soybean, rapeseed oil are gaining importance in recent years as speciality additives in polymer industry as they are ecofriendly, biodegradable and are from renewable sources. Conventional additives are non-reactive, volatile and are not ecofriendly. The evaluation of epoxidized jatropha oil (EJO) as potential plasticizer for standard epoxy formulations has been carried out by varying the weight percentage of the EJO. The EJO was prepared using performic acid method. The epoxy oil was evaluated for oxirane value (5.0), acid value (0.1), hydroxyl value (0.5), iodine value (nil), viscosity (146.52 cSt at 40°C, 18.19 cSt at 100°C), pour point (0°C), flash point (288°C) and spectral properties like IR, ^{1}H NMR, ^{13}C NMR, GC and GC-MS. The epoxy formulations containing different concentrations of epoxy jatropha oil were evaluated for their thermal, dynamic mechanical properties and morphology. The glass